

planar side portion and opening into said planar side for removal of swarf out through said planar side.

REMARKS

Reconsideration and reexamination of this application in light of the above amendments and the following remarks is respectfully requested. Claims 1-20 are pending in this application. Of these claims, 1, 10 and 17 are independent claims. These three independent claims have been amended. Basis for the amendments can be found throughout the specification, claims and drawings as originally filed.

Rejection Under 35 U.S.C. §112, Second Paragraph

Referring to the Examiner's Paragraph 1, the Examiner has rejected claims 1, 10 and 17 under 35 U.S.C. §112, second paragraph, for phrases being vague, indefinite, and/or awkwardly and confusingly worded. Applicant has amended claims 1, 10 and 17 to address the Examiner's suggested corrections. Specifically, the claims have been amended to correct typographical errors outlined by the Examiner. In light of the above amendments, Applicant believes that the claims overcome the rejection under 35 U.S.C. §112, second paragraph and respectfully requests withdrawal of the same.

Rejection Under 35 U.S.C. §102(b)

Referring to the Examiner's Paragraphs 2 and 3, the Examiner has rejected claims 1-3, 9, 10 and 16 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,655,958 (Lupi). Applicant respectfully traverses the rejection.

In order for the 35 U.S.C. §102(b) rejection to stand, each and every claimed feature must find correspondence in the cited art. In the subject invention as claimed,

the invention includes "at least one swarf clearing groove extending at an angle across a part of said (cutting) surface and opening into the planar side for removal of swarf out through said planar side." Such structure is nowhere disclosed or rendered obvious in the cited Lupi patent.

Applicant respectfully submits that Lupi fails to anticipate independent claims 1 and 10 as amended. The swarf clearing groove in the present application is not disclosed in Lupi. The grooves (11) in Lupi that the Examiner proposes are swarf cleaning grooves have the purpose of holding firmly a coating of elastomeric material. An abrasive element is subsequently attached to this elastomeric coating. When the grinding wheel in Lupi is in use, the grooves (11) remain filled with the elastomeric material. Accordingly, the grinding wheel, in final form, does not include any grooves. The grooves (11) are only used during the manufacture of the grinding wheel itself.

In view of the foregoing, Applicant respectfully submits that claims 1 and 10 define over the art cited by the Examiner and respectfully requests withdrawal of the rejection. Likewise, claims 2-3, 9 and 16, which depend from claims 1 and 10, further define the invention and define over the art cited by the Examiner. Thus, Applicant respectfully requests withdrawal of the rejection.

Rejection Under 35 U.S.C. §103

With reference to the Examiner's Paragraphs 4 and 5, the Examiner has rejected claims 4-8, 11-15, and 17-20 under 35 U.S.C. §103(a) as being unpatentable over Lupi. Applicant respectfully traverses the rejection.

Claims 4-8, 11-15 and 17-20 depend from claims 10 and 17 respectively. As set forth above, Lupi does not teach, suggest or render obvious the swarf clearing

grooves of the present invention. Thus, these claims dependent thereon are not rendered obvious when viewed in combination with these independent claims.

Applicant respectfully submits that Lupi does not teach, suggest or render obvious claims 4-7, 11-14 and 17. The length and angle of a swarf clearing groove would not be obvious to one of ordinary skill in the art. The Lupi reference does not disclose any swarf clearing grooves in an outer cutting surface of a grinding wheel. Accordingly, the length and angle of such swarf clearing grooves would not be obvious. Thus, Applicant respectfully submits that claims 4-7, 11-14 and 17 are patentably distinguishable over the art cited by the Examiner.

Applicant respectfully submits that Lupi does not teach or suggest claims 8, 15 or 18 and more specifically the Lupi patent teaches away from using various attachment means for attaching an abrasive element to the outer cutting surface. The Lupi patent discloses a specific chemical weld for attaching the abrasive element, in strips, to the elastomeric coating. The Lupi patent does not suggest or recommend any other attachment techniques. The present invention of the subject application permits attachment of the abrasive element to the cutting surface by a variety of techniques because the material of each is not limited as in the Lupi patent. One of ordinary skill in the art would not attempt other attachment methods after reviewing the Lupi patent because it teaches away from using other techniques. Additionally, the combination of these attachment methods and swarf clearance grooves or an edging wheel is not rendered obvious by the Lupi patent.

In view of the foregoing, Applicant respectfully submits that claims 8, 15 and 18-20 are patentably distinguishable over the art cited by the Examiner and respectfully requests withdrawal of the rejection.

Conclusion


In view of the foregoing, Applicant respectfully requests reconsideration and reexamination of the Application. Applicant respectfully submits that each item raised by the Examiner in the Office Action of July 6, 2001 has been successfully traversed, overcome or rendered moot by this response. Applicant respectfully submits that each of the claims in this Application is in condition for allowance and such allowance is earnestly solicited.

The Examiner is invited to telephone the applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.

Please send all future correspondence relating to this application to Warn, Burgess & Hoffmann, P.C., P.O. Box 70098, Rochester Hills, MI 48307.

Respectfully submitted,

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Dated: October 9, 2001

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification

On Page 4, the 3rd Paragraph has been substituted as follows:

The cross-section of the beveling groove may be any of the desirable cross-sections for use of the lens in a glass frame of those known in the art. Typically, it is an angled section of about 105 degrees, as shown in the drawings. However, other configurations may be readily adapted to the present invention. Typically, the abrasive grits used in the present invention are from about 5-10 microns to about 100-120 [mesh] microns. Preferably, the grits are attached by brazing the abrasive grit onto the wheel. However, the grit surface may also be attached by sintering electroplating or resin bonding, with a preferred abrasive grit material being a diamond-like hardness abrasive grit. However, other materials such as silicon carbides, tungsten carbides, oxides, garnets, cubic boron nitride, and natural and synthetic diamonds may be used alone or in combination in the present invention. It has been found that the wheel of the present invention eliminates about 90 percent of the swarf from the edge of polycarbonate, high index and CR39 lens materials.

In the Claims

Claim 1. (Amended) A rotary edging wheel for edge finishing of an optical lens comprising:

a hub portion adapted for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto;

a radially extending planar side portion; and

at least one swarf clearing groove extending at an angle at least across a part of said surface[;] and

[an] opening into said planar side for removal of swarf out through said planar side.

Claim 10. (Amended) A rotary bevel edging wheel for edge finishing of an optical lens comprising:

a hub portion adapted for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, and having a circumferential groove therein for forming an edge contour onto an optical lens;

a radially extending planar side portion; and

a plurality of [at least one] swarf clearing [groove] grooves extending at an angle at least across a part of said surface[;] and

[an] opening into said planar side for removal of swarf out through said planar side.

Claim 17. (Amended) A rotary bevel edging wheel for edge finishing of an optical lens comprising:

a hub portion adapted for attachment to a rotary power source;

an outer circumferential cutting surface having a width, said surface including an abrasive grit attached thereto, and having a circumferential groove therein for forming an edge contour onto an optical lens;

a radially extending planar side portion; and

a plurality of swarf clearing [groove] grooves extending across the width of said outer circumferential cutting surface, at an angle of from about 35 to about 45 degrees to said planar side portion[;] and [an] opening into said planar side for removal of swarf out through said planar side.